

05/22/2007

ECC 63 Herb Hill Road Glen Cove, NY 11542 **STL Edison** 777 New Durham Road Edison, NJ 08817

Tel 732 549 3900 Fax 732 549 3679 www.stl-inc.com

Attention: Mr. Phil O'Dwyer

Laboratory Results Job No. G192 - Li Tungsten

Dear Mr. O'Dwyer:

Enclosed are the results you requested for the following sample(s) received at our laboratory on May 11, 2007.

Lab No.	Client ID	Analysis Required
828279	5601-FSS-PB-104B	As
		Pb
828280	5601-FSS-PB-105B	As
		Pb
828281	5601-FSS-PB-1029	As
		Pb

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If you have any questions, please contact me at (732) 549-3900.

Very Truly Yours,

Michael Legg Project Manager

Analytical Results Summary	1
General Information  Chain of Custody  Laboratory Chronicles  Methodology Review  Data Reporting Qualifiers  Non-Conformance Summary	5 7 11 15 17
Metals Forms and Data  Analytical Results Summary  Blank Results Summary  Calibration Summary  ICP Interference Check Results Summary  Spike Sample Recovery Summary  Sample and MS Duplicate Results Summary  Laboratory Control Samples Results Summary  Serial Dilution Summary  Analysis Run Log	19 19 23 26 31 34 37 40 42 44
This is the Last Page of the Document	49

## **Analytical Results Summary**

Client ID: 5601-FSS-PB-104B

Lab Sample No: 828279

Site: Li Tungsten

Lab Job No: G192

Date Sampled: 05/10/07 Date Received: 05/11/07 Matrix: SOLID Level: LOW

% Moisture: 18.2

#### METALS ANALYSIS

	Analytical Result Units: mg/kg	Instrument Detection		
<u>Analyte</u>	(Dry Weight)	Limit	<u>Qual</u>	M
Arsenic	54.9	1.1		P
Lead	75.2	0.66		P

Qual Column - Data Reporting Qualifiers (See Sec 2 of Report) M Column - Method Code (See Section 2 of Report)

2

Client ID: **5601-FSS-PB-105B** Lab Sample No: 828280

Site: Li Tungsten Lab Job No: G192

Date Sampled: 05/10/07 Matrix: SOLID
Date Received: 05/11/07 Level: LOW

% Moisture: 20.4

#### METALS ANALYSIS

<u>Analyte</u>	Analytical Result Units: mg/kg (Dry Weight)	Instrument Detection Limit	Qual	<u>м</u>
Arsenic	16.1	1.2		P
Lead	25.3	0.68		₽

Qual Column - Data Reporting Qualifiers (See Sec 2 of Report) M Column - Method Code (See Section 2 of Report)

3

Client ID: 5601-FSS-PB-1029 Lab Sample No: 828281

Site: Li Tungsten Lab Job No: G192

Date Sampled: 05/10/07 Matrix: SOLID
Date Received: 05/11/07 Level: LOW

% Moisture: 24.7

### METALS ANALYSIS

<u>Analyte</u>	Analytical Result Units: mg/kg (Dry Weight)	Instrument Detection Limit	Qual	<u>M</u>	
Arsenic	9.4	1.2		p	
Lead	23.1	0.72		P	

Qual Column - Data Reporting Qualifiers (See Sec 2 of Report) M Column - Method Code (See Section 2 of Report)

## **General Information**

Chain of Custody

<b>Environmental Chemical Corporation</b>	Corporation									
1746 Cole Blvd.	•									
Bldg. 21, Suite 350										
Lakewood, CO 80401										
Phone: (303) 298-7607										(8)
Fax: (303) 298-7837					-		COC Number:			2114
Customer Name: ECC – Li Tungsten Address: 63 Herb Hill Road, Glen Cove, NY 11542	igsten en Cove, NY 1154	2		-			ECC Project Manager:_Phil O'Dwyer Address: 63 Herb Hill Road, Glen Cove, NY 11542	ager:_Phil O'Dwyer Hill Road, Glen C	wyer en Cove, NY	11542
Contact: Theodore Johnson							Phone: (614) 402 - 2020	- 2020		
Phone: (303) 472 - 8834 Fax: (516) 665- 8531							Customer Project Name: Li Tungsten	t Name: Li Tur	ıgsten	
SAMPLE NUMBER	DATE	TIME	TYPE	CLIENT S	CLIENT SAMPLE IDENTIFIER	NTIFIER	TESTS	CONTA	CONTAINER(S)	MATRIX
5601 -FSS-PB-104B	5/10/2007	14:50	FSS		Parcel B			1 gla	1 glass jar	Soil
5601 -FSS-PB-105B	5/10/2007	14:55	FSS		Parcel B		Total Lead & Arsenic		1 glass jar	Soil
5601 -FSS-PB-1029	5/10/2007	14:55	FSS		Parcel B			1 gla	1 glass jar	Soil
N/A					-					
N/A										
N/A										
N/A										
N/A										
N/A										
N/A										
N/A							-			
Notes: Ship to: Severn Trent Laboratory, EDISON 777 New Durham Road, Suite 7, Edison, New Jersey, 08817 Phone: 732-549-3900 Request Turnaround Time: 3 Day	, EDISON Edison, New Jerse ay	y, 08817	Samples o	Samples cooled below 4 C	A 4 C		Laboratory Receipt Information Cooler/Container Intact? Samples Received At Below 4 C? Samples Containers Intact? Cooler/Container Custody Seal?	I Information ntact? At Below 4 C? rs Intact?	Yes Yes Yes	No No No No No No No No No No No No No N
			CUSTODY TRANSFER RECORD	ANSFER RI	CORD					
Relinquished By		Company	Ď	Date	Time	Received By		Company	Date	Time
Print: T Johnson Sign: 1		ECC	5/10/	5/10/2007	16:25	Print:	2 2			
Print & EX			Still	Lo	なれる	Print:	, Pr.	52		٠.
Print:				و سدد د		Print:	\	2		

**Laboratory Chronicles** 

## INTERNAL CUSTODY RECORD AND LABORATORY CHRONICLE STL Edison

# 777 New Durham Road, Edison, New Jersey 08817

Job No:	G192	Site:	Li Tungsten
Client:	ECC	Date Sampled:	5/10/2007
Sample No.:	828279	Date Received:	5/11/2007
		Matrix:	SOLID

## **METALS**

Analytic Parameter	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
ARSENIC	5/14/2007	Evans, Donald	5/14/2007	Polidori, Michael	22577
LEAC	5/14/2007	Evans, Donald	5/14/2007	Polidori, Michael	22577

## INTERNAL CUSTODY RECORD AND LABORATORY CHRONICLE STL Edison

# 777 New Durham Road, Edison, New Jersey 08817

Job No:	G192	Site:	Li Tungsten
Client:	ECC	Date Sampled:	5/10/2007
Sample No.:	828280	Date Received:	5/11/2007
		Matrix:	SOLID

## **METALS**

Analytic Parameter	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
ARSENIC	5/14/2007	Evans, Donald	5/14/2007	Polidori, Michael	22577
LEAD	5/14/2007	Evans, Donald	5/14/2007	Polidori, Michael	22577

## INTERNAL CUSTODY RECORD AND LABORATORY CHRONICLE STL Edison

# 777 New Durham Road, Edison, New Jersey 08817

Job No:	G192	Site:	Li Tungsten
Client:	ECC	Date Sampled:	5/10/2007
Sample No.:	828281	Date Received:	5/11/2007
•		Matrix:	
		matrix.	

## **METALS**

Analytic Parameter	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
ARSENIC	5/14/2007	Evans, Donald	5/14/2007	Polidori, Michael	22577
LEAC	5/14/2007	Evans, Donald	5/14/2007	Polidori, Michael	22577

Methodology Review

#### Analytical Methodology Summary

#### Volatile Organics:

Unless otherwise specified, water samples are analyzed for volatile organics by purge and trap GC/MS as specified in EPA Method 624. Drinking water samples are analyzed by EPA Method 524.2 Rev 4.1. Solid samples are analyzed for volatile organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8260B.

#### Acid and Base/Neutral Extractable Organics:

Unless otherwise specified, water samples are analyzed for acid and/or base/neutral extractable organics by GC/MS in accordance with EPA Method 625. Solids are analyzed for acid and/or base/neutral extractable organics as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8270C.

#### GC/MS Nontarget Compound Analysis:

Analysis for nontarget compounds is conducted, upon request, in conjunction with GC/MS analyses by EPA Methods 624, 625, 8260B and 8270C. Nontarget compound analysis is conducted using a forward library search of the EPA/NIH/NBS mass spectral library of compounds at the greatest apparent concentration (10% or greater of the nearest internal standard) in each organic fraction (15 for volatile, 15 for base/neutrals and 10 for acid extractables).

#### Organochlorine Pesticides and PCBs:

Unless otherwise specified, water samples are analyzed for organochlorine pesticides and PCBs by dual column gas chromatography with electron capture detectors as specified in EPA Method 608. Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition) Method 8081A for organochlorine pesticides and Method 8082 for PCBs.

#### Total Petroleum Hydrocarbons:

Water samples are analyzed for petroleum hydrocarbons by I.R. using EPA Method 418.1. Solid samples are prepared for analysis by soxhlet extraction consistent with the March 1990 N.J. DEP "Remedial Investigation Guide" Appendix A, page 52, and analyzed by U.S. EPA Method 418.1

#### Metals Analysis:

Metals analyses are performed by any of four techniques specified by a Method Code provided on each data report page, as follows:

- P Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP)
- A Flame Atomic Absorption
- F Furnace Atomic Absorption
- CV Manual Cold Vapor (Mercury)

Water samples are digested and analyzed using EPA methods provided in "Methods for Chemical Analysis of Water and Wastewater" (EPA 600/4-79-020). Solid samples are analyzed as specified in the EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition); samples are digested according to Method 3050B "Acid Digestion of Soil, Sediments and Sludges."

Specific method references for ICP analyses are water Method - 200.7/SW846 6010B and for solid matrix - 6010B. Mercury analyses are conducted by the manual cold vapor technique specified by water Method 245.1/7470A and solid Method 7471A. Other specific Atomic Absorption method references are as follows:

Element	Water Test Method <u>Furnace</u>	Solid Test Method <u>Furnace</u>
Antimony	200.9	7041
Arsenic	200.9	7060A
Cadmium	200.9	7131A
Lead	200.9	7421
Selenium	200.9	7740
Thallium	200.9	7841

#### Cyanide:

Water samples are analyzed for cyanide using EPA Method 335.3. Cyanide is determined in solid samples as specified in the EPA Contract Laboratory Program IFB dated July 1988, revised February 1989.

#### Phenols:

Water samples are analyzed for total phenols using EPA Method 420.2. Total phenols are determined in water and solid samples by preparing the sample as outlined in the EPA Contract Laboratory Program IFB for cyanide, followed by a phenols determination using EPA Method 420.1.

#### Hexavalent Chromium:

Water samples are analyzed using EPA Method 7196A, EPA Method 7199 or (upon request) USGS -1230-35. Soil samples are subjected to alkaline digestion via EPA Method 3060A prior to analysis by EPA Method 7196A or EPA Method 7199.

#### Cleanup of Semivolatile Extracts:

Upon request Method 3611B Alumina Column Cleanup and/or Method 3650B Acid-Base Partition Cleanup are performed to improve detection limits by the removal of saturated hydrocarbon interferences.

#### Hazardous Waste Characteristics:

Samples for hazardous waste characteristics are analyzed as specified in the U.S. EPA publication "Test Methods for Evaluating Solid Waste" (SW-846, 3rd Edition). Specific method references are as follows:

Ignitability - Method 1020A

Corrosivity - Water pH Method 9040B Soil pH Method 9045C

Reactivity - Chapter 7, Section 7.3.3 and 7.3.4 respectively for hydrogen cyanide and hydrogen sulfide release

Toxicity - TCLP Method 1311

#### Miscellaneous Parameters:

Additional analyses performed on both aqueous and solid samples are in accordance with methods published in the following references:

- Test Methods for Evaluating Solid Wastes, SW-846 3rd Edition, November 1986.
- Standard Methods for the Examination of Water and Wastewater, 18th Edition.
- Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, 1979.

Data Reporting Qualifiers

### ORGANIC DATA REPORTING QUALIFIERS

- ND The compound was not detected at the indicated concentration.
- J Mass spectral data indicates the presence of a compound that meets the identification criteria. The result is less than the specified quantitation limit but greater than or equal to the method detection limit. The concentration given is an approximate value.
- B The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.
- P For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.
  - \* For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

## INORGANIC DATA REPORTING QUALIFIERS (SW-846 METHODS ONLY)

- ND/U The compound was not detected at the indicated concentration.
- B Reported value is less than the Practical Quantitation Limit but greater than or equal to the Instrument Detection Limit.
- E The reported value is estimated because of the presence of interference. See explanatory note in the Nonconformance Summary if the problem applies to all of the samples or on the individual Inorganic Analysis Data Sheet if the problem is isolated.
- M Duplicate injection precision not met on the Furnace Atomic Absorption analysis.
- N The spiked sample recovery is not within control limits.
- S The reported value was determined by the Method of Standard Additions (MSA).
- \* Duplicate Analysis is not within control limits.
- W Post digestion spike for Furnace Atomic Absorption analysis is out of control.
- + Correlation coefficient for MSA is less than 0.995.
- M Column Method Qualifiers
- P Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP).
- A Flame Atomic Absorption Spectroscopy (FAA).
- F Graphite Furnace Atomic Absorption Spectroscopy (GFAA).
- CV Cold Vapor Atomic Absorption Spectroscopy.

Non-Conformance Summary



## **Nonconformance Summary**

STL Edison Job Number: G192

Client: ECC

**Date:** 5/22/2007

## **Sample Receipt:**

Sample delivery conforms with requirements.

## **Metals:**

All data conforms with method requirements.

I certify that the test results contained in this data package meet all requirements of NELAC both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this package has been authorized by the Laboratory Director or their designee, as verified by the following signature.

Michael Legg Project Manager

## **Metals Forms and Data**

Analytical Results Summary

Client ID: 5601-FSS-PB-104B Lab Sample No: 828279

Site: Li Tungsten Lab Job No: G192

Date Sampled: 05/10/07 Matrix: SOLID
Date Received: 05/11/07 Level: LOW

% Moisture: 18.2

#### METALS ANALYSIS

Analyte	Analytical Result Units: mg/kg (Dry Weight)	Instrument Detection Limit	<u> Oual</u>	<u>M</u>
Arsenic	54.9	1.1		P
Lead	75.2	0.66		D

Qual Column - Data Reporting Qualifiers (See Sec 2 of Report) M Column - Method Code (See Section 2 of Report)

Client ID: **5601-FSS-PB-105B** Lab Sample No: 828280

Site: Li Tungsten Lab Job No: G192

Date Sampled: 05/10/07 Matrix: SOLID
Date Received: 05/11/07 Level: LOW

% Moisture: 20.4

## METALS ANALYSIS

<u>Analyte</u>	Analytical Result Units: mg/kg (Dry Weight)	Instrument Detection Limit	Qual	<u>м</u>
Arsenic	16.1	1.2		P
Lead	25.3	0.68		₽

Qual Column - Data Reporting Qualifiers (See Sec 2 of Report)
M Column - Method Code (See Section 2 of Report)

Client ID: 5601-FSS-PB-1029 Lab Sample No: 828281

Site: Li Tungsten Lab Job No: G192

Date Sampled: 05/10/07 Matrix: SOLID Date Received: 05/11/07 Level: LOW

% Moisture: 24.7

### METALS ANALYSIS

<u>Analyte</u>	Analytical Result Units: mg/kg (Dry Weight)	Instrument Detection Limit	<u> Oual</u>	<u>M</u>	
Arsenic	9.4	1.2		p	
Lead	23.1	0.72		P	

Qual Column - Data Reporting Qualifiers (See Sec 2 of Report) M Column - Method Code (See Section 2 of Report)

Blank Results Summary

#### BLANKS

Lab	Name:	$\mathtt{STL}$	EDISON		
		_		· · · · · · · · · · · · · · · · · · ·	

Lab Code: 12028\_ Lab Job No.: \_G192 \_\_\_\_\_ Batch No.: 22577\_

Preparation Blank Matrix (soil/water): SOIL\_

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

      Analyte	Initial Calib. Blank (ug/L)	C	Cont.		uing Calib lank (ug/L 2	tion 3		c	Prepa- ration Blank	С	
Aluminum_   Antimony_   Arsenic   Barium   Beryllium   Cadmium   Calcium   Chromium   Cobalt			4.7	_  _  _  _			4 · 7_ 	  -   -   -   -   -	0.470	_     _     _	
Copper    Iron    Lead    Magnesium     Manganese     Mercury    Nickel    Potassium     Selenium	2.7	_     U     _     _     U	2.7	U	2.7		2.9_	  _   _	0.270	_   _   _	NR_     NR_     P     NR_     NR_     P     NR_
Silver    Sodium    Thallium    Vanadium    Zinc    Molybdenu											NR_     NR_     NR_     NR_     NR_

## BLANKS

цар	vanc.	211 2013						
Lab	Code:	12028_	Lab	Job No.: _G	192		Batch No.:	22577_
Prep	paratio	n Blank	Matrix	(soil/water	):			
Pre	paratio	n Blank	Concent	ration Unit	s (ua/L or	ma/ka) ·		

						,		• • • •	· ·			1 1
        Analyte	Initial Calib. Blank (ug/L)	C	Cont.		uing C lank (			tion 3	C	    Prepa-    ration    Blank	C	
i i	. 3, .	_	_					-	-		j	'
Aluminum		$\overline{}$		1	l ·		Ī		Τi		T l	NR
Antimony		-	<del></del>	i-	¦		¦-		i-i		-:-:	NR
Arsenic	4.7	ָן טו	4.7	Ū	i —	4.7	שׁ	4.7	וטו		- -	P
Barium —				- 	¦	- · · –	Ϊ-	¦				NR
Beryllium		i-i		i-	\ <del></del>		` -		-		-¦-¦	NR
Cadmium		-   <del>-  </del>		-	!		¦		-		-¦-¦	NR
Calcium		-i-i		iΞ	<u> </u>		-		i-i		- -	NR
Chromium	3.0	ับ	3.0	U	i ——	3.0	ับ	3.0	י <del>ט</del> ו		-	P
Cobalt		i i		İ		_	i	i — –	i	1	-i-i	NR
Copper		i – i		i –			1		iTi		-i-i	NR
Iron		i i		j –			i -		iTi		-¦-;	NR
Lead	2.7	ט	2.7_	Ū		2.7	<u>י</u>	2.7	İΰİ		-i-i	P
Magnesium		.ii		İ		_	Ï	i	Ìί	i	- i i	NR
Manganese		. I _ i		ĺ_			i –		i-i		-i-i	NR
Mercury				Ī			i_:		i	i	-i-i	NR
Nickel	2.4	U	2.4_	Ū		2.4_	<del>-</del>	2.4	ן ט		- i - i	P
Potassium		. _		ĺ_					<u>i_i</u>		-i-i	NR
$ Selenium_{\_} $		. _					<u> </u>				- i - i	NR
Silver		. _		_					i_i		_i_i	NR
Sodium		1_1		_			<u> </u>		ΪĪ		_i_i	NR
$  exttt{Thallium}_{-} $		1_1		_					<u> </u>		- i i	NR
Vanadium_	***************************************	_		_	797-14				i_i		Ξij	NR
Zinc		. _					ΙĪÌ		i_i		_i_i	NR_
Molybdenu	T	1_1					I = I		<u> </u> _		_i_i	NR_
		. _		_			_		اً ــ ا		_i_i	1i

Calibration Summary

Lab Name	: STL_EDISON_					
Lab Code	: 12028_	Lab Job No	o.: G192	<del></del>	Batch No	.: 22577_
Initial	Calibration S	ource:	INORG VENT			

Continuing Calibration Source: INORG VENT\_\_\_

Concentration Units: ug/L

	   Initia	al Calibra	ation		Continui	ng Cal:	ibration		1
Analyte 	True 	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	İ
Aluminum_		1	1		<u> </u>	1		1	
Antimony_			1		i				Ϊİ
Arsenic	5000.0	4909.77	98.2	5000.0	5003.12	100.1	5060.61	101.2	İ
Barium			İ	i —	i –	į	i	i	ΙÌ
Beryllium			i			i			 
Cadmium			}	i ———		i ——		i	: :
Calcium				ĺ		i ——		i —	
Chromium_	5000.0	_5012.65	100.3	5000.0	5069.53	101.4	5135.71	102.7	
Cobalt			İ	İ	<u> </u>		<u> </u>	j	ij
Copper					Ì	İ		i	Π
Iron			l			i		i	iί
Lead	_10000.0	10036.26	100.4	10000.0	10147.32	101.5	10251.56	102.5	Ħ
Magnesium					ĺ	j .		İ	iί
Manganese									ij
Mercury					İ			i ——	Ϊİ
Nickel	2500.0	_2507.75	100.3	2500.0	_2537.41	101.5	2573.70	102.9	ίi
Potassium	<del></del> :				Í	ii	_		Ħ
Selenium_		ļl							ÌΪ
Silver									i i:
Sodium									Ϊİ
Thallium_									ij
Vanadium_	{								i i:
Zinc									i i:
Molybdenu	l								i i:
									ÌΪ

Lab Name:	STL_EDISON	-		 	
Lab Code:	12028_	Lab Job No	o.: G192	 Batch No.:	22577_
Initial Ca	alibration So	ource:	INORG VENT		

Continuing Calibration Source: INORG VENT\_\_

Concentration Units: ug/L

  Analyte	Initial True	Calibr Found		     True	Continui: Found		oration Found	%R(1)	
Anaryce	irue	Found	ar (T)	liue	round	5K(1)	Found	4K(1)	
Aluminum_			<u></u>			1			NR
Antimony_						i i		i	NR
Arsenic			ĺ	5000.0	_5145.55	102.9			₽_
Barium				i –		i i			NR
Beryllium			<u> </u>			i — i -	***************************************	i —	NR
Cadmium				j	i				NR
Calcium			i —		i			i	NR
Chromium_			i	5000.0	5234.09	104.7	***************************************	i —	P_
Cobalt				i <del></del>	i <del>-</del>	i i <sup>-</sup>			NR
Copper						i — i -		i —	NR
Iron			i	İ		ii _			NR
Lead				10000.0	10438.00	104.4		i — —	P_
Magnesium				j		i i			NR
Manganese			İ			ii _			NR
Mercury									NR
Nickel				2500.0	2625.88	105.0		i — i	P_
Potassium _					i <del>-</del>	i i -		i — i	NR
Selenium_ _			<u>                                     </u>						NR
Silver _						i		i	NR
Sodium	l							i	NR
Thallium_ _								i i	NR
Vanadium_									NR
Zinc _							······································	i i	NR
Molybdenu	[_						•		NR
						i — i –		i — — i	i i

Lab	Name:	STL_EDISON_		*****			
Lab	Code:	12028_	Lab Job No.	: G192	<del></del>	Batch No.:	22577_

Initial Calibration Source: INORG VENT\_\_

Continuing Calibration Source: INORG VENT\_\_

Concentration Units: ug/L

  Analyte	Initial Calibration   True Found %R(1)			Continuing Calibration True Found %R(1) Found %R(1)					
Aluminum									NR
Antimony_				l					NR
Arsenic	5000.0	_4821.76	_96.4	5000.0	4858.57	_97.2	_4918.90	98.4	P_
Barium								l	NR
Beryllium						[			NR
Cadmium	<u> </u>								NR
Calcium_					<u> </u>				NR
Chromium_	5000.0	_4931.23	_98.6	5000.0	4932.79	_98.7	_4980.95	_99.6	P_
Cobalt			l			ll			NR
Copper		*****							NR
Iron	<u></u>								NR
Lead	_10000.0	_9779.09	_97.8	_10000.0	_9812.59	98.1	_9962.41	99.6	P_
Magnesium						li			NR
Manganese									NR
Mercury									NR
Nickel	2500.0	2450.72	_98.0	2500.0	_2460.05	98.4	_2477.96	_99.1	P_
Potassium			İ	l		ll			NR
Selenium_			l						NR
Silver	i		li						NR
Sodium						li	7200		NR
Thallium_					l			l	NR
Vanadium_					<u> </u>				NR
Zinc									NR
Molybdenu									NR
									<u>  _                                     </u>

Lab Name: STL_EDISON		 ***	
Lab Code: 12028_ Lab Job No	o.: G192	 Batch No.:	22577_
Initial Calibration Source:	INORG VENT		
Continuing Calibration Source:	INORG VENT		

Concentration Units: ug/L

		Calibr		_	Continui				
Analyte 	True	Found	%R(1)	True	Found	*R(1)	Found	%R(1)	
Aluminum_			1						NR
Antimony_				İ					NR
Arsenic				5000.0	_4895.09	97.9			Ì Ì₽_
Barium					i —	i i			NR
Beryllium			<u> </u>			j i			NR
Cadmium			<u> </u>			i — i			NR
Calcium_							•	i —	NR
Chromium_				5000.0	_4961.08	99.2		i —	P_
Cobalt			i	<u> </u>	i <del>-</del>	i i -			NR
Copper			j —			i		i	NR
Iron			<u> </u>				. ' '	i ——	NR
Lead				10000.0	9908.90	99.1		i ——	P_
Magnesium	i		i	_ 	_	i – i –			NR
Manganese						i i			NR
Mercury			i						NR
Nickel				2500.0	_2470.44	98.8		i — — i	₽_
Potassium				ii	_	i – i –			NR
Selenium_						-	771117211	i — i	NR
Silver						-		i	NR
Sodium							·	i — — i	NR
Thallium_			i			-		i — i	NR
Vanadium_						-			NR
Zinc			<u>                                     </u>				<del>,</del>		NR
Molybdenu								i	NR
						-		i —	i

ICP Interference Check Results Summary

## ICP INTERFERENCE CHECK SAMPLE

Lab Name:	STL EDISON	
	_	***************************************

Lab Code: 12028\_ Lab Job No.: \_G192 \_\_\_\_\_ Batch No.: 22577\_

ICP ID Number: TRACE1 TJA61 ICS Source: INORG VENT\_\_\_

## Concentration Units: ug/L

. **			1	**				
	T:	rue	Initial Found			Final Found		
	Sol.	Sol.	Sol.	Sol.		Sol.	Sol.	_
Analyte	A	AB	A	AB	%R	A	AB	%R
Aluminum_	500000	500000	490260	493480.9	98.7	508918	505102.3	101.0
Antimony	Ì	100	<u> </u>	-	110.4	_	116.8	•
Arsenic	i	100	***	99.5	99.5		!	103.9
Barium_		100			105.8	!——	7.707	112.4
Beryllium		100		99.8	99.8		:	102.3
Cadmium		100		96.5	96.5		101.4	101.4
Calcium	500000	_500000	494990	492417.7	98.5	_511522	502157.7	100.4
Chromium_		100			98.8	: —		100.0
Cobalt		100		97.9	97.9		101.0	101.0
Copper		100		102.2	102.2			106.3
Iron	200000	200000	205038	204634.1	102.3	209595	206368.4	103.2
Lead		100	_	100.2	100.2	i —	_	100.9
Magnesium	500000	_500000	534530	_534296.5	106.9	548656		
Manganese		100			98.5	_	· <del></del>	98.2
Mercury					i i			i –
Nickel		100		101.0	101.0		102.8	102.8
Potassium					İi		<del></del>	j
Selenium_		100		93.7	93.7		97.2	97.2
Silver		100		102.2	102.2		106.8	106.8
Sodium					li			İ
Thallium_		100		101.9	101.9		109.3	109.3
Vanadium_		100		97.3	97.3		103.9	103.9
Zinc		100		100.3	100.3		109.8	109.8
						,		

## ICP INTERFERENCE CHECK SAMPLE

Lab Name: STL\_EDISON\_\_\_\_

Lab Code: 12028\_ Lab Job No.: \_G192 \_\_\_\_ Batch No.: 22577\_

ICP ID Number: TRACE1 TJA61 ICS Source: INORG VENT\_\_

## Concentration Units: ug/L

	True		Initial Found		   Final Found			
	Sol. Sol.		Sol. Sol.		Sol. Sol.			
Analyte	A	AB	A	AB	%R	A	AB	%R
Aluminum	500000	500000	   488488	_490767.6	98.2	   496783	491137.4	98.2
Antimony -	j	100		: <del></del>	105.7	. —	: —	105.7
Arsenic		100		!	98.0	· ———	· ———	99.7
Barium		100		· <del></del>	107.0			106.9
Beryllium		100			98.6		!	100.0
Cadmium		100		94.6	94.6		95.7	95.7
Calcium_	500000	_500000	486828	_484237.8	96.8	490590		· —
Chromium_		100	<u> </u>	97.6	97.6		98.5	98.5
Cobalt		100		95.2	_95.2		97.8	97.8
Copper		100		103.4	103.4		102.3	102.3
Iron	200000	_200000	203054	202437.7	101.2	205103	205136.6	102.6
Lead	İ İ	100	_		103.0	· <del>-</del>	· <del></del>	101.5
Magnesium	500000	_500000	_530328	_529081.8	105.8	538340		
Manganese		100			_99.2		_	100.1
Mercury								<u>.</u>
Nickel	l	100		99.2	_99.2		100.3	100.3
Potassium								İ
Selenium_		100		92.1	92.1		96.7	96.7
Silver		100		103.6	103.6		104.4	104.4
Sodium	·				l			Í
Thallium_		100		91.6	91.6		93.7	_93.7
Vanadium_		100		94.7	_94.7		95.3	95.3
Zinc		100		102.8	102.8		101.4	101.4
	l			***************************************				l

Spike Sample Recovery Summary

### SPIKE SAMPLE RECOVERY

		BSS051407
Lab Name:	STL_EDISON	

Lab Code: 12028\_ Lab Job No.: G192 \_\_\_\_\_Batch No.: 22577\_

Matrix (soil/water): SOIL\_\_\_ Level (low/med): LOW\_\_\_\_

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

	1 1								
	  Control								 
	Limit	Spiked Sample	į	Sample	į	Spike		İ	İ
Analyte	%R	Result (SSR)	С	Result (SR)	c	Added (SA)	%R	Q	М
Aluminum_			T		<u> </u>			-	   NR
Antimony_					įΞį			i –	NR
Arsenic	75-125_	193.4721	ΙΞi	0.4700	įυi	200.00	96.7	_	P_
Barium	!i		i-i		i i			_	NR
Beryllium			i Ti		i i	i		_	NR
Cadmium			įΤį		i – i			_	NR
Calcium	ii		i <b>~</b> i		i i			_	NR
Chromium_	75-125_	19.5716	iΞi	0.3000	ָ ע	20.00	97.9	_	р
Cobalt			ΙĪ		İί			-	NR
Copper			i_i		i i			_	NR
Iron	i		İΤί		i			_	NR
Lead	75-125	49.8747	İΪ	0.2700	<u>י</u>	50.00	99.7	_ i	P
Magnesium			įΤį		ii			_	NR
Manganese			i-i		-			-	NR
Mercury			i Ti	-	-			- 1	NR
Nickel	75-125	50.3301	Ϊij	0.2400	σi	50.00	100.7	-¦	P
Potassium	i		iΞi	<del></del>	i		i	-¦	NR
${\tt Selenium}_{\_} $			i-i		i			-i	NR
Silver			Ϊİ		- i			<del></del>	NR
Sodium			iΞi		_i			-1	NR
Thallium_			i_i		-i	· · · · · · · · · · · · · · · · · · ·		-¦	NR
Vanadium_			İΤί		-i				NR
Zinc			i		-;		I	-:	NR
Molybdenu	i		i_i		-i		·····	-!	NR
			i_i		i		i	٠¦	

omments:					
- conniti-	 		•		*****
	 			/*/ <b>*</b>	
	·	1	****		
	 	100			

# SPIKE SAMPLE RECOVERY

	   828270MS
Lab Name: STL_EDISON	ii
Lab Code: 12028_ Lab Job No.: G192	Batch No.: 22577_
Matrix (soil/water): SOIL	Level (low/med): LOW

% Solids for Sample: \_93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

	  Control								 
'	   Limit	Spiked Sample	i	Sample	ĺ	Spike			İ
Analyte	%R	Result (SSR)	c	Result (SR)	С	Added (SA)	%R	Q	М
Aluminum	 		-l		-		<del></del>	_ 	   NR
Antimony			i i		i⊤i				NR
Arsenic	75-125_	181.5110	i <u> </u>	1.0108	Ū	215.05	84.4	i-	P
Barium			i – i	The state of the s	i i	i		i –	NR
Beryllium			i – i		i i			-	NR
Cadmium			iΞi		i i			i –	NR
Calcium_	l		i Ti		i i			i –	NR
Chromium_	75-125_	69.2346	i – i	53.3925	i-i	21.51	73.6	N	ŧ
Cobalt	i		i Ti		i i	<del></del>			NR
Copper			iΤi	· · · · · · · · · · · · · · · · · · ·	i Ti			_	NR
Iron			įΞį		ΙĪ		-	_	NR
Lead	75-125_	52.9847_	iΞi	6.5275	ΙĪ	53.76	86.4	_	P_
Magnesium			<u> </u>		i	i		_	NR
Manganese			i _ i					_	NR
Mercury					ĺΪ			_	NR
Nickel	75-125_	54.9718_	$\Box$ i	7.8084	в	53.76	87.7		P
Potassium	[				<u> </u>		<del></del>	_	NR
Selenium_					ΞÌ			_	NR
Silver								_	NR
Sodium					i			_	NR
Thallium_			<u>-</u>		Ξi		i	_	NR
Vanadium_			Ξi		_i			-i	NR
Zinc			Ξi				i	-	NR
Molybdenu			Ξi		$\overline{}$			-1	NR
			_i		-i				

omr	ments:					
-	/www.		##	···	· · · · · · · · · · · · · · · · · · ·	 
_				1 1111		
_	*******	7.5		W081-4-W041		 

Sample and MS Duplicate Results Summary

### DUPLICATES

		LCSSD055-D
Lab Name: STI	edison	

Lab Code: 12028\_ Lab Job No.: \_\_G192 \_\_\_\_\_ Batch No.: 22577\_

Matrix (soil/water): SOIL\_ Level (low/med): \_LOW\_\_

Concentration Units (ug/L or mg/kg dry weight): MG/KG

	Control	j	i			i		Ϊİ	
Analyte	Limit	Sample (S)	c	Duplicate (	D)	cį	RPD	ļΩ	M
Aluminum_			  _			-¦		_    _	  NR
Antimony_						ΞĹ		i i $\overline{}$	NR
Arsenic		77.2236		79.95	14	_ i	3.5	ΙĪ	Р
Barium		1	i_i		İ	_i	i	į	NR
Beryllium		<u> </u>	i		i	-i			NR
Cadmium			i Ti		T į	-i		i i =	NR
Calcium					i	-i		i i ¯	NR
Chromium_		84.2680	iΞi	87.74	14	_i	4.0	i i <sup>—</sup>	₽
Cobalt			i=i		i	_i	i —	_	NR
Copper			IΞLi		i	- j		i-	NR
Iron			1_11		i	Ξį.		i –	NR
Lead		78.7098	_	83.89	90	<u> </u>	6.4	i	P
Magnesium			_		[	<u> </u>			NR
Manganese			_		1			ÌΞ	NR
Mercury			_		[	_		iΞ	NR
$ exttt{Nickel}\_\_ $		104.6354		109.18	88	Ī	4.3	i -	₽
Potassium			[i		i]	_ i	i	-	NR
${ t Selenium}_{-} $					ΞÏ.	_ i	ii	i_,	NR
${ t Silver}_{oxedsymbol{$			_11			_	ii	j	NR
Sodium			_			<u> </u>	j i		NR
Thallium_			_		i	_	i	iΞ.	NR
Vanadium_			_		i	ĺ		<u> </u>	NR
Zinc					i	_ j			NR
Molybdenu	1				i -	Ī		i Ti	NR

#### DUPLICATES

			828270D
Lab Name:	STL_EDISON	******	

Lab Code: 12028\_ Lab Job No.: \_\_G192 \_\_\_\_\_ Batch No.: 22577\_

Matrix (soil/water): SOIL\_ Level (low/med): LOW\_

% Solids for Sample: \_93.0
% Solids for Duplicate: \_\_93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

1			ĺ		1	1 1		<u> </u>
	Control				!	! ! 		
Analyte	Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum_			<u>-</u>		 		-	NR
Antimony_			ĬΞĬ		ΙĪ		1	NR
Arsenic		1.0108	U	1.0108	ן ט		<u> </u>	P_
Barium			<u> </u>	İ	i_i	ii	i_i	NR
Beryllium			<u> </u>		iΤi	i i	i-i	NR
Cadmium			ii		i i	i i		NR
Calcium_			Ϊİ		iΤi	i	i-i	NR
Chromium_		53.3925	i Ti	62.3196	Ī	15.4	i-i	₽
Cobalt			i		i - i	i - i	i	NR
Copper			iΤi	İ	i	i — i	i-i	NR
Iron			ĬΞÌ		i_i	ii	i_i	NR
Lead		6.5275	ĺΞĺ	7.8748	ĬΞĬ	18.7	İ	Ρİ
Magnesium					ĺΠ		i-i	NR
Manganese			i		ΙĪ	i i	iΞi	NR
Mercury			i_i		ĬΞĬ	i	iTi	NR
Nickel	4.3_	7.8084	В	11.9039		41.6	iΞi	Ρİ
Potassium			<u> </u>		iΤi	i	i-i	NR
Selenium_			i_i		ΙŢ	i i	i	NR
Silver			<u>                                     </u>		i i	i	$i^-i$	NR
Sodium						i — i	i-i	NR
Thallium_	<u></u>		<u> </u>		Ξi	i i	i i	NR
Vanadium_			<u> </u>		_j		"	NR
Zinc						i	$i^-i$	NR
Molybdenu					Ţ.		$i^-i$	NR
					_j		ΙΞÌ	i

39

Laboratory Control Samples Results Summary

# LABORATORY CONTROL SAMPLE

nap Name: 51	T_FD130N				
Lab Code: 12	028_ Lab Job No.:	G192	Batch	No.: 2	2577_
Solid LCS So	urce: ERA D055				
Aqueous LCS	Source:				

į	Aqueous (ug/L)			Solid (mg/kg)					
Analyte	True	Found	%R	True	Found	С	Limi	its	%R
Aluminum_						1.1			l
Antimony_						ΙĪ			
Arsenic		1		88.8	77.2	iΤi	71.8	106.0	86.9
Barium				í i		i i			i —
Beryllium					<del></del>	j			
Cadmium				į — — į		i			<u> </u>
Calcium						i Ti			
Chromium_				97.9	84.3	i-i	77.2	118.0	86.1
Cobalt				i		í <b>-</b> i	<u> </u>		
Copper			•			i – i			
Iron						i-i			
Lead		i		88.9	78.7	i	72.7	105.0	88.5
Magnesium						i Ti			
Manganese	i	i i				i Ti	<u> </u>		
Mercury		i -				i i			
Nickel	i			116.0	104.6	i i	95.8	136.0	90.2
Potassium	i	i.		i		i – i ·			
Selenium_		i				i – i ·		11111	
Silver						-		****	
Sodium						i – i -			
Thallium_						- -			
Vanadium_				i -	W 10 10	i-i-			
Zinc						- -			
Molybdenu		i	i			i-i-			
į.	i		\			-	<del></del>	! !	

Serial Dilution Summary

### ICP SERIAL DILUTION

	828270L
Lab Name: STL_EDISON	

Lab Code: 12028\_ Lab Job No.: \_G192 \_\_\_\_ Batch No.: 22577\_

Matrix (soil/water): SOIL\_ Level (low/med): LOW\_\_

Concentration Units: ug/L

			Serial		8		
	Initial Sample		Dilution	ļ	Differ-		
Analyte	Result (I)	C	Result (S)	C	ence	Q	M
Aluminum	I	<u>-</u>		┰¦		_	NR
Antimony		i-i		- -		;-	NR
Arsenic	4.70	וֹטּוֹ	23.50	<u>י</u>	i	i-	P
Barium -	7/50	i		-; - ;		-	NR
Beryllium		i-i		-¦¦			NR
Cadmium		<u> </u>		-ii		i-	NR
Calcium_		i Ti		-i-i	i		NR
Chromium_	248.28	iΤi	251.28	-i-i	1.2	i-	P
Cobalt	i	i		-i-i	i -i	-	NR
Copper		İΪ		ΪŢ	ii	i –	NR
Iron		ĬΞĬ		ijŦį	i i	i -	NR
Lead	30.35	i_i	30.70	- i i	1.2	i	P
Magnesium		i		i	i i	i-	NR
Manganese		ĬΞÌ		i-i	ii	i-	NR
Mercury		<u> </u>		1_1			NR
Nickel	36.31	В	34.62	В	4.7	i_	P
Potassium		<u> </u>		.i_i	i <u> </u>	i i	NR
Selenium_					ii	i i	NR
Silver				ĬΞÌ		i-i	NR
Sodium		_		ΪΞÌ		i⊡i	NR
Thallium_		_		1_1	<u> </u>		NR
Vanadium_		_		.  <u>_</u>	ii	<u> </u>	NR
Zinc				1_1		iΞi	NR
			1	Ιİ		i i	

Analysis Run Log

Lab N	Tame:	STL	_EDISON_	Contract:	
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Lab Code: 12028\_ Case No.: \_\_\_\_\_ SDG No.:22577\_

Instrument ID Number: TRACE1 TJA61\_ Method: P\_

	1	<u> </u>	1		<del></del>									20		1											_	
   Lab	! 	<u> </u>			1									Al	ıa.	т Х.	te	3										
Sample	D/F	Time	%	R	I_A	İS	A	B	В	lc	lc	C	¢	C	F	Ιp	М	М	H	N	lк	l g	A	l NT	lт	l v	7	м
No.	-,-								E				0	:	•	В	•	•	G		20	•	G	,	L	"	N	
i	İ	İ	İ		i <sup>-</sup>	<del>-</del>	-		-	-					-	! — 	<b>-</b>		•	-	1	-	-	**		]		
1CAL-BLK	1.00	1101	i		x	x	x	x	x	x	x	x	X	x	$\frac{1}{x}$	x	x	_   X	¦ —	x	<del>-</del>	x	x	¦-	x	x	x	x
T1CAL1	1.00	1106	i —		x	x	x	x	х	х	х	х	x	X	,	Х	Х	Х	_	Х	i –	Х		i-	Х	Х	, ,	x
T1CAL2	1.00	1112			İx	x	x	Х	х	х	X	Х	Х	Х	Х	x	х		i –	Х	i – i	Х	Х	i –	Х	,	. ,	
T1CAL3	1.00	1117					x		x	x	х		х	x	х	x	x		¦-	x	i —	X	!	i-	x	•	: :	
zzzzzz	1.00	•	i		i	ί	İ	İ	i .					 					-		¦-¦		••	-		<del></del>   		<u> </u>
ICV/CCV_	1.00	1129	i —		i —	i-	x	_	-	i – i	****	x	-	-	-	x	i –	-	_	x	-	_	—	i –		-	;	-
ICB/CCB_	1.00	1134	i		i –	i –	х	i –	i –	i — i		X	-	i – i	i –	х	<b>.</b>		-	x	i-i	-	i –	-	-	i – i	ı-¦	- <u> </u>
ICSA	1.00	1140			i_	i –	Х	<u> </u>	_	_		х	i –	-	_	x		_	_	х	i – i	_		i —	- 	-	,-¦	ı-i
ICSAB	1.00	1148			<u> </u>	<u> </u>	х			i i	_	Х	_		i – i	х	i – i	_		х	i – i	_	-		-	-		-i
ZZZZZZ	1.00	1154	]		Ĭ_	Ī					_	ĺ		i – i	i – i		~	_	_		i – i	_	_	-	-	i – i	_i	_i
ZZZZZZ	1.00	1159	ĺ		į –	i	-	_		i	_	_	-	_		_	i – i	_	_		i – i	_	i – i		-	-	_ i	_i
ZZZZZZ	1.00	1205			iΞ		_	i – i	i	-i	_i	_i		-		_		-i		i	i – i	_	-	-	-	i – i	-	-
ZZZZZZ	10.00	1211	İ		i_	_	i	i	-	_i	-i	-i	-	-	-	_	_		_	i j	-	_	-	i – i	- 	i – i	_	-
ZZZZZZ	10.00	1216			iΞ		i	i	i i	_i	_i	٦i		i i	i i	_	_		-i	- i	i-i	_	-		-	-	-	-i
ZZZZZZ	10.00	1222			i <sup>-</sup>			i	i – i	-i	-i	-i	Ξi	_ i	i-i	_	-	_i		i – i	i – i	-	-			i-i	-i	-i
ZZZZZZ	10.00	1227			i T	_	-	_	i	_i	−i	-i	-	-	-i	_	-i	_	_	-	- i	-		- i	-	-i	-i	-i
ZZZZZZ	10.00	1233	Ì		İ_1			<u> </u>	i		_i	_i	_i	_i	i	_	-i	-i	_ i		_	-i	_i	-i		i	-	-
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Lab	Name:	STL_EDISON	<u> </u>	Contract:	
Lab	Code:	12028_	Case No.:	SAS No.:	SDG No.:22577_

Instrument ID Number: TRACE1 TJA61\_\_ Method: P\_

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Lab	Name:	STL EDISON	Contract:	

Lab Code: 12028\_ Case No.: \_\_\_\_ SAS No.: \_\_\_\_ SDG No.:22577\_

Instrument ID Number: TRACE1 TJA61\_ Method: P\_

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Lab	Name:	STL_EDISON	1	Contract:	
Lab	Code:	12028_	Case No.:	SAS No.:	SDG No.:22577

Instrument ID Number: TRACE1 TJA61\_ Method: P\_

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